Textbook Alignment to the Utah Core – Eighth Grade Integrated Science

This alignment has been completed using an "Independent Alignment Vendor" from the USOE approved list (www.schools.utah.gov/curr/imc/indvendor.html.) Yes __x____ No _____

Name of Company and Individual Conducting Alignment: Eisemann Communication, Molly Rhoadhouse

A "Credential Sheet" has been completed on the above company/evaluator and is (Please check one of the following):

x On record with the USOE.

The "Credential Sheet" is attached to this alignment.

Instructional Materials Evaluation Criteria (name and grade of the core document used to align):

Core Curriculum

Title: Holt Science and Technology, Short Courses © 2007

ISBN#: Course A SE 0030499321; Course B SE 0030499577 ; Course C SE 0030499585; Course D SE 0030499682; Course E SE 0030500494; Course F SE 0030500524; Course G SE 0030500621; Course H SE 0030500729; Course I SE 0030500737Course J SE 0030500826; Course K SE 0030500923; Course L SE 0030501024; Course M SE 0030501121; Course N SE 0030501229; Course O SE 0030501326; Course P SE 0030501539

Publisher: Holt, Rinehart and Winston

Overall percentage of coverage in the Student Edition (SE) and Teacher Edition (TE) of the Utah State Core Curriculum: 100%

Overall percentage of coverage in ancillary materials of the Utah Core Curriculum: _____0_____%

STANDARD I: Students will understand the nature of changes in matter.				
Percentage of coverage in the *student and teacher edition* for Standard I: 100%		**Percentage of coverage not in student or teacher edition, but covered in the *ancillary material* for Standard I: _____0___%**		
OBJECTIVES & INDICATORS		**Coverage in *Student Edition(SE) and Teacher Edition (TE)* (pg #'s, etc.)**	**Coverage in *Ancillary Material* (titles, pg #'s, etc.)**	***Not covered in TE, SE or ancillaries*** ✓
Objective 1.1: Describe the chemical and physical properties of various substances.				
a.	Differentiate between chemical and physical properties.	Course K SE 2-9, 10-15, 16-21, 22, 23, 130-133 Course L SE 28, 31		
b.	Classify substances based on their chemical and physical properties (e.g., reacts with water, does not react with water, flammable or nonflammable, hard or soft, flexible or nonflexible, evaporates or melts at room temperature).	Course K SE 22, 23		
c.	Investigate and report on the chemical and physical properties of a particular substance.	Course K SE 22, 23, 130-133		
Objective 1.2: Observe and evaluate evidence of chemical and physical change.				
a.	Identify observable evidence of a physical change (e.g., change in shape, size, phase).	Course K SE 14, 15, 17, 20, 22, 23, 40-45		
b.	Identify observable evidence of a chemical change (e.g., col change, heat or light given off, change in odor, gas given of	Course K SE 18-20, 22, 23 Course L SE 28-31		

c.	Observe and describe chemical reactions involving atmospheric oxygen (e.g., rust, fire, respiration, photosynthesis).	Course A SE 110-113, 122, 123 Course C SE 39-41 Course D SE 46 Course E SE 33, 34		
d.	Investigate the effects of chemical change on physical properties of substances (e.g., cooking a raw egg, iron rustin polymerization of a resin).	Course K SE 18-20, 22, 23 Course L SE 28-31		
Objective 1.3: Investigate and measure the effects of increasing or decreasing the amount of energy in a physical or chemical change, and relate the kind of energy added to the motion of the particles.				
a.	Identify the kinds of energy (e.g., heat, light, sound) given off or taken in when a substance undergoes a chemical or physical change.	Course K SE 18, 21 Course L SE 26, 29, 30, 42-47 Course M SE 174, 175		
b.	Relate the amount of energy added or taken away from a substance to the motion of molecules in the substance.	Course K SE 40-45, 46, 47, 135 Course M SE 158-160		
c.	Measure and graph the relationship between the states of water and changes in its temperature.	Course K SE 45-47		
d.	Cite evidence showing that heat may be given off or taken in during a chemical change (e.g., striking a match, mixing vinegar and antacid, mixing ammonium chloride and water).	Course K SE 18, 21 Course L SE 29, 30, 42-27 Course M SE 174, 175		

e.	Plan and conduct an experiment, and report the effect of adding or removing energy on the chemical and physical changes.	Course L SE 112, 113		
Objective 1.4: Identify the observable features of chemical reactions.				
a.	Identify the reactants and products in a given chemical change and describe the presence of the same atoms in both the reactants and products.	Course C SE 38-41 Course L SE 28-31, 32-37, 38-41, 110, 112-113		
b.	Cite examples of common significant chemical reactions (e.g., photosynthesis, respiration, combustion, rusting) in daily life.	Course A SE 110-113, 122, 123 Course C SE 39-41 Course D SE 46 Course E SE 33, 34 Course K SE 18, 19, 63 Course L SE 34, 35, 42		
c.	Demonstrate that mass is conserved in a chemical reaction (e.g., mix two solutions that result in a color change or for-mation of a precipitate and weigh the solutions before and after mixing).	Course L SE 32-37,110, 112-113		
d.	Experiment with variables affecting the relative rates of chemical changes (e.g., heating, cooling, stirring, crushing, concentration).	Course L SE 42-47, 48-49, 111		

e.	Research and report on how scientists or engineers have applied principles of chemistry to an application encountered in daily life (e.g., heat-resistant plastic handles on pans, rust-resistant paints on highway bridges).	Course K SE 16, 17, 28, 52, 78, 128 Course L SE 24, 54		

STANDARD II: Students will understand that energy from sunlight is changed to chemical energy in plants, transfers between living organisms, and that changing the environment may alter the amount of energy provided to living organisms.				
Percentage of coverage in the *student and teacher edition* for Standard II: 100%		**Percentage of coverage not in student or teacher edition, but covered in the *ancillary material* for Standard III: _____0_____%**		
OBJECTIVES & INDICATORS		**Coverage in *Student Edition(SE) and Teacher Edition (TE)* (pg #'s, etc.)**	**Coverage in *Ancillary Material* (titles, pg #'s, etc.)**	***Not covered in TE, SE or ancillaries*** ✔
Objective 2.1: Compare ways that plants and animals obtain and use energy.				
a.	Recognize the importance of photosynthesis in using light energy as part of the chemical process that builds plant materials.	Course A SE 110-113, 122, 123 Course C SE 39-41 Course D SE 46 Course E SE 33, 34 Course L SE 43 Course M SE 134		

b.	Explain how respiration in animals is a process that converts food energy into mechanical and heat energy.	Course C SE 39-41 Course D SE 44, 46, 48, 49 Course M SE 134		
c.	Trace the path of energy from the sun to mechanical energy in an organism (e.g., sunlight - light energy to plants by photosynthesis to sugars - stored chemical energy to respiration in muscle cell - usable chemical energy to muscle contraction- mechanical energy).	Course C SE 38-40 Course E SE 8, 9 Course L SE 43 Course M SE 134		
Objective 2.2: Generalize the dependent relationships between organisms.				
a.	Categorize the relationships between organisms (i.e., producer/consumer/decomposer, predator/prey, mutualism/parasitism) and provide examples of each.	Course A SE 30, 31, 87, 90, 91, 113 Course B SE 8-13, 14-16, 34 Course E SE 2-7, 8-13, 14-20		
b.	Use models to trace the flow of energy in food chains and food webs.	Course E SE 4-7, 10, 13		
c.	Formulate and test a hypothesis on the effects of air, temperature, water, or light on plants (e.g., seed germination growth rates, seasonal adaptations).	Course A SE 77, 109, 116 Course O SE 130		
d.	Research multiple ways that different scientists have investigated the same ecosystem.	Course E SE 92, 93, 135		

Objective 2.3: Analyze human influence on the capacity of an environment to sustain living things.				
a.	Describe specific examples of how humans have changed the capacity of an environment to support specific life forms (e.g., people create wetlands and nesting boxes that increase the number and range of wood ducks, acid rain damages amphibian eggs and reduces population of frogs, clear cutting forests affects squirrel populations, suburban sprawl reduces mule deer winter range thus decreasing numbers of deer).	Course B SE 73, 110, 113, 115 Course E SE 78-83 Course G SE 48-51 Course I SE 97		
b.	Distinguish between inference and evidence in a newspaper or magazine article relating to the effect of humans on the environment.	Course E SE* 78-83, 84-90 Course H SE* 76, 77		
c.	Infer the potential effects of humans on a specific food web.	Course E SE 12, 13, 20, 81, 82 Course H SE 76, 77		
d.	Evaluate and present arguments for and against allowing a specific species of plant or animal to become extinct, and relate the argument to the of flow energy in an ecosystem.	Course E SE 12, 13, 20, 88, 89		

STANDARD III: Students will understand the processes of rock and fossil formation.	
Percentage of coverage in the *student and teacher edition* for Standard III: 100%	**Percentage of coverage not in student or teacher edition, but covered in the *ancillary material* for Standard IV: _____0_____%**

OBJECTIVES & INDICATORS		Coverage in *Student Edition(SE) and Teacher Edition (TE)* (pg #'s, etc.)	Coverage in *Ancillary Material* (titles, pg #'s, etc.)	*Not covered in TE, SE or ancillaries* ✓
Objective 3.1: Compare rocks and minerals and describe how they are related.				
a.	Recognize that most rocks are composed of minerals.	Course F SE 4, 26-34, 36-39, 40-43, 46-48		
b.	Observe and describe the minerals found in rocks (e.g., shap color, luster, texture, hardness).	Course F SE 8-11, 33, 34, 47, 180, 181		
c.	Categorize rock samples as sedimentary, metamorphic, or igneous.	Course C SE 111 Course F SE 29, 33, 34, 36-39, 40-43, 44-49		
Objective 3.2: Describe the nature of the changes that rocks undergo over long periods of time.				
a.	Diagram and explain the rock cycle.	Course F SE 28-35		
b.	Describe the role of energy in the processes that change rock materials over time.	Course F SE 29-32, 36, 40, 44-46, 56		
c.	Use a model to demonstrate how erosion changes the surface of Earth.	Course G SE 52, 53, 70, 82, 83 TE 76, 79 Course H SE 4, TE 14		
d.	Relate gravity to changes in Earth's surface.	Course G SE 78-81		

e.	Identify the role of weathering of rocks in soil formation.	Course G SE 32-37, 38-41, 42-47, 52, 53		
f.	Describe and model the processes of fossil formation.	Course C SE 110-113, 136 Course F SE 74-76		
Objective 3.3: Describe how rock and fossil evidence is used to infer Earth's history.				
a.	Describe how the deposition of rock materials produces layering of sedimentary rocks over time.	Course C SE 111 Course F SE 64-69, 86, 87		
b.	Identify the assumptions scientists make to determine relative ages of rock layers.	Course F SE 60, 61, 64-69, 86, 87		
c.	Explain why some sedimentary rock layers may not always appear with youngest rock on top and older rocks below (i.e., folding, faulting).	Course F SE 60, 61, 64-69, 86, 87, 113-115		
d.	Research how fossils show evidence of the changing surface of the Earth.	Course C SE 110-113, 136 Course F SE 77, 78, 81, 83-85		
e.	Propose why more recently deposited rock layers are more likely to contain fossils resembling existing species than older rock layers.	Course C SE 110-113, 136 HST F SE 77, 78, 81, 83-85		
Objective 3.4: Compare rapid and gradual changes to Earth's surface.				
a.	Describe how energy from the Earth's interior causes chang to Earth's surface (i.e., earthquakes, volcanoes).	Course F SE 130-135, 156-161, 166-171		

b.	Describe how earthquakes and volcanoes transfer energy fro Earth's interior to the surface (e.g., seismic waves transfer mechanical energy, flowing magma transfers heat and mechanical energy).	Course F SE 130-135, 156-161, 166-171		
c.	Model the process of energy buildup and release in earthquakes.	Course F TE 131		
d.	Investigate and report possible reasons why the best engineering or ecological practices are not always followed making decisions about building roads, dams, and other structures.	Course F SE 140-145, 146, 147		
e.	Model how small changes over time add up to major change to Earth's surface.	Course G SE 31, 36, 52, 53, 61		

STANDARD IV: Students will understand the relationships among energy, force, and motion.				
Percentage of coverage in the *student and teacher edition* for Standard IV: 100%		**Percentage of coverage not in student or teacher edition, but covered in the *ancillary material* for Standard VI: _____0_____%**		
OBJECTIVES & INDICATORS		**Coverage in *Student Edition(SE) and Teacher Edition (TE)* (pg #'s, etc.)**	**Coverage in *Ancillary Material* (titles, pg #'s, etc.)**	***Not covered in TE, SE or ancillaries*** ✔
Objective 4.1: Investigate the transfer of energy through various materials.				
a.	Relate the energy of a wave to wavelength.	Course O SE 11-13, 124, 125		
b.	Compare the transfer of energy (i.e., sound, light, earthquake waves, heat) through various mediums.	Course A SE 5 Course F SE 110, 120, 121, 134 Course H SE 83 Course I SE 10-12 Course M SE 167-169, 206, 207 Course O SE 5, 32, 65		
c.	Describe the spread of energy away from an energy-producing source.	Course M SE 128-130, 134, 139		

d.	Compare the transfer of heat by conduction, convection, and radiation and provide examples of each.	Course A SE 5 Course F SE 110, 120, 121 Course H SE 83 Course I SE 10-12 Course M SE 167-169, 206, 207 Course O SE 65		
e.	Demonstrate how white light can be separated into the visible color spectrum.	Course O SE 67, 70, 71, 78		
Objective 4.2: Examine the force exerted on objects by gravity.				
a.	Distinguish between mass and weight.	Course M SE 20-25, 39		
b.	Cite examples of how Earth's gravitational force on an object depends upon the mass of the object.	Course J SE 82, 83 Course M SE 20-25		
c.	Describe how Earth's gravitational force on an object depends upon the distance of the object from Earth.	Course J SE 82, 83 Course M SE 20-25		
d.	Design and build structures to support a load.	Course F SE* 146, 147 Course M SE* 193-, 201		
e.	Engineer (design and build) a machine that uses gravity to accomplish a task.	Course M SE 204		

Objective 4.3: Investigate the application of forces that act on objects, and the resulting motion.				
a.	Calculate the mechanical advantage created by a lever.	Course M SE 103, 106-107		
b.	Engineer a device that uses levers or inclined planes to create a mechanical advantage.	Course M SE 201		
c.	Engineer a device that uses friction to control the motion of an object.	Course M SE 15, 194		
d.	Design and build a complex machine capable of doing a specified task.	Course M SE 204		
e.	Investigate the principles used to engineer changes in forces and motion.	Course M SE 94-97, 100-105, 106-112, 202-204		
Objective 4.4: Analyze various forms of energy and how living organisms sense and respond to energy.				
a.	Analyze the cyclic nature of potential and kinetic energy (e.g., a bouncing ball, a pendulum).	Course M SE 94, 124-127, 132, 133, 205		
b.	Trace the conversion of energy from one form of energy to another (e.g., light to chemical to mechanical).	Course L SE 42, 43, 97 Course M SE 132-140, 148, 149, 205		
c.	Cite examples of how organisms sense various types of energy.	Course A SE 5, 54, 88, 89, 118 Course B SE 33, 41, 42, 63, 92 Course D SE 83, 90, 91-93, 104 Course O SE 130		

d.	Investigate and report the response of various organisms to changes in energy (e.g., plant response to light, human response to motion, sound, light, insect's response to changes in light intensity).	Course A SE 5, 54, 88, 89, 118 Course B SE 33, 41, 42, 63, 92 Course D SE 83, 90, 91-93, 104 Course O SE 130		
e.	Investigate and describe how engineers have developed devices to help us sense various types of energy (e.g., seismographs, eyeglasses, telescopes, hearing aids).	Course D SE 91 Course F SE 136, 137 Course J SE 8-13, 22, 23, 61, 90 Course O SE 108, 109		